North American Conference on

ELDERLY MOBILITY

Noteworthy Practices Guide

U.S. Department of Transportation
Federal Highway Administration

Safe Roads for a Safer Future
Investment in roadway safety saves lives

Foreword

It was an honor to sponsor and participate in the North American Conference on Elderly Mobility held May 11-14, 2014 in Detroit, Michigan. As our population ages, it is increasingly important that we account for the safety and needs of older adults and people with disabilities in our transportation system. Keeping our aging population mobile is important for maintaining independence and quality of life. We must also be mindful that older adults are especially vulnerable to injury and death in crashes. Communities across the nation recognize the transportation challenges facing older adults and are looking for methods to keep them safely on the move. The Federal Highway Administration is committed to improving the safety of our transportation system, and we hope this publication will help.

This guide showcases several national and international noteworthy practices presented during each conference track: alternative transportation, infrastructure and vehicles, driver education and training, driver screening and assessment, and housing and land use. The agencies and organizations featured on the following pages have significantly improved the safety and mobility of our older population through the use of various techniques and programs.

We hope you will consider implementing these successful programs and initiatives in your community.

Sincerely,

Tony Furst

Associate Administrator for Safety
Federal Highway Administration

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Table of Contents

Acronyms and Abbreviations 3

Infastructure and Vehicles

- Handbook for Designing Roadways for the Aging Population 4
- Michigan Showcase Roadway 7
- Adaptive LED Lighting in New Zealand 10
- Vernon, British Columbia: Older Driver Pilot Project 11
- Alberta Traffic Safety Guide to Accommodating Older Drivers 12

Driver Screening and Assessment

- Collaboration Between Law Enforcement and Public Health Organizations: The Cognitive Assessment Tool 13
- Maryland's Multi-tiered System to Assess Medical Fitness 14

Driver Education and Training

- Florida's Aging Road User Strategic Safety Plan 16
- Michigan's Guide for Aging Drivers and Their Families 18
- CarFit 20
- Using Driving Rehab Specialists to Help Older Drivers Keep the Keys 22
- New and Improved AARP Smart Driver™ Course 24

Alternative Transportation, Mobility Management, and Coordination

- myride2 25
- Kansas City: Link for Care 26
- Aging, Disability, and Transportation Agencies Working Together: Mobility Management in Wisconsin 28
- A Bus is a Bus: Making Efficient Use of Unused Transportation Avenues 29
- ITNAmerica 30
- New York City's Senior Pedestrian Focus Areas 32
- TimeBanking and Transportation 34
- Seniors Training Seniors How to Use Transit 36

Housing and Land Use

- Engaging Older Adults in Emergency Preparedness Planning 37
- It Takes a Village: Transportation Options 39

Table of Contents, cont'd

List of Figures

Figure 1. Handbook for Designing Roadways for the Aging Population 4
Figure 2. Older Driver Showcase Roadway in Detroit 7
Figure 3. Signal Backplates with No Reflective Strip (left) and Signal Backplates with Yellow Retroreflective Strip (right) 8
Figure 4. Adaptive LED Road Lighting 10
Figure 5. Senior Focus Group 11
Figure 6. Alberta Traffic Safety Plan 2015 12
Figure 7. Curve Delineation 12
Figure 8. Law enforcement screening driver for cognitive impairment with DOSCI tool 13
Figure 9. Florida's Aging Road User Strategic Safety Plan 17
Figure 10. Michigan's Guide for Aging Drivers and Their Families 18
Figure 11. CarFit Process 21
Figure 12. Driving Rehab Specialists Conduct an In-vehicle Evaluation 22
Figure 13. Genesis Rehab Services Outlines Four Key Steps that clients can Take to Get Started with Driving Rehabilitation 23
Figure 14. Homepage of the myride2 Website 25
Figure 15. Transportation Search Options for the Link for Care Website 26
Figure 16. Homepage of the Link for Care Website 27
Figure 17. ITNAmerica Affiliate Sites 31
Figure 18. Intersection daylights 32
Figure 19. Allerton Ave, Bronx, New York City: Road Diet with Left Turn Bays, Pedestrian Refuge Islands and Bike Lanes (installed 2009) 33
Figure 20. Walker Senior Neighbors Riding the Rapid 36
Figure 21. Seniors Participating in Emergency Planning 37
Figure 22. Emergency Personnel Evacuating Seniors 38
Figure 23. Current number of Village communities across the nation as of August 2014 40

List of Tables

Table 1. Treatments Recommended for Proven Practices 5
Table 2. Treatments Recommended for Promising Practices 6

Acronyms and Abbreviations

AAA	American Automobile Association
ASTM	American Society for Testing and Materials
DCTB	Dane County TimeBank
DMV	Department of Motor Vehicles
DOSCI	Driver Orientation Screen for Cognitive Impairment
DOT	Department of Transportation
DRS	Driving Rehab Specialist
FCT	Functional Capacity Screening Test
FHWA	Federal Highway Administration
GRS	Genesis Rehab Services
ICBC	Insurance Corporation of British Columbia
ITN	Independent Transportation Network
JFS	Jewish Family Service
KCATA	Kansas City Area Transportation Authority
KU	University of Kansas
LED	Light Emitting Diode
MAB	Medical Advisory Board
MDOT	Michigan Department of Transportation
MVA	Maryland Motor Vehicle Administration
NACEM	North American Conference on Elderly Mobility
NYC DOT	New York City Department of Transportation
RSA	Road Safety Audit
SATA	Shiawassee Area Transportation Agency
SPFA	Senior Pedestrian Focus Area
TCD	Traffic Control Device
TREDS	Training, Research and Education for Driving Safety
UC	University of California
WAMM	Wisconsin Association of Mobility Managers
WisDOT	Wisconsin Department of Transportation

Handbook for Designing Roadways for the Aging Population

The 2014 Federal Highway Administration (FHWA) *Handbook for Designing Roadways for the Aging Population*, (Figure 1) contains 33 proven treatments, 18 promising treatments, and 143 recommendations. The *Handbook* now in its third edition; and under a new title, incorporates the latest research and advancements in treatments since the previous editions were published in 1998 and 2001.

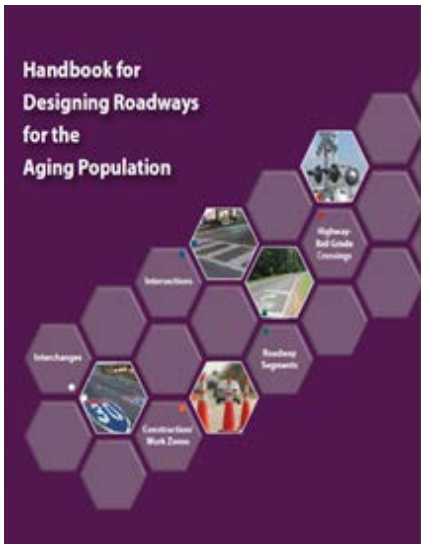


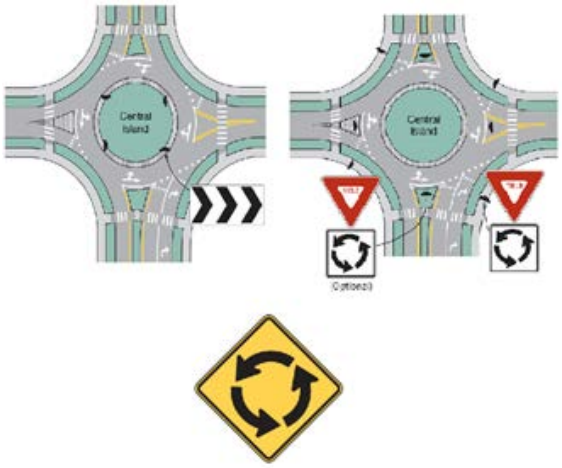
Figure 1. Handbook for Designing Roadways for the Aging Population

The *Handbook* is composed of two parts. Part I includes recommendations for treatments and countermeasures to address specific areas of concern for aging road users. Treatments focus on five categories of roadway features: intersections, interchanges, roadway segments, work zones, and highway-railway grade crossings. Within each category treatments are classified as a "proven" or "promising" practices. Proven practices are based on supporting evidence drawn from a comprehensive review of field and laboratory research addressing human factors and highway safety. Promising practices are new to this edition of the Handbook and are treatments being used by one or more agencies. Although they are not fully evaluated, they are believed to benefit aging roadway users.

As an example, Chapter 2 of the *Handbook* focuses on intersections, which is the most serious and enduring crash problem area for aging road users. This particular chapter includes treatments for 16 Proven Practices and 8 Promising Practices.

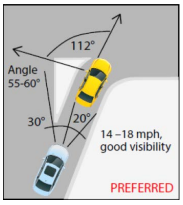
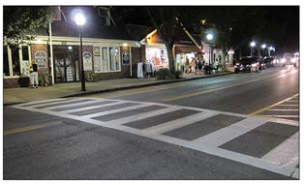
Some of the treatments recommended for intersection Proven Practices are detailed in Table 1.

Table 1. Treatments Recommended for Proven Practices

Intersection Proven Practice	Treatment Recommendation	
Traffic Signals	Install 12-inch signal heads.	
	Provide yellow retroreflective borders on backplates	
Pedestrian Crossings	Revise walking speed from 2.8 feet per second to 3.0 feet per second.	
	Measure crossing distance 6 feet back from the curb or edge of travel lane.	
	Install countdown pedestrian signals at all signalized intersections.	
Roundabouts	Provide Advance Warning Signs (W2-6).	
	Provide Directional Arrow Signs (R6-4).	
	Install Roundabout Circulation Plaque (R6-5P).	

Some of the treatments recommended for intersection promising practices are detailed in Table 2.

Table 2. Treatments Recommended for Promising Practices

Intersection Promising Practice	Treatment Recommendation	
Right-Turn Channelization Design	Right-turn channelization should be considered during design. A tighter turning radius reduce turning speeds to approximately 17 to 18 mph, decrease pedestrian crossing distances, and optimize the right-turning motorists' line of sight.	
Combination Lane-Use/ Destination Overhead Guide Signs	Provide combination lane-use/ destination overhead guide signs at intersections with complex design features or heavy traffic.	
Signal Head Visibility	Install one signal head per lane, centered over each lane.	
High-Visibility Crosswalks	Use marking patterns that are more visible than standard markings (such as ladder or diagonal patterns).	
Supplemental Pavement Marking for Stop and Yield Signs	Install word or symbol pavement markings to supplement signs.	

Part II of the *Handbook* presents the rationale and supporting evidence for each treatment.

The Handbook for Designing Roadways for the Aging Population is a resource that practitioners can use to improve the safety of the transportation system for the aging population. To download a copy, visit http://safety.fhwa.dot.gov/older_users.

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Michigan Showcase Roadway

For the 2004 North American Conference on Elderly Mobility (NACEM), the Michigan Department of Transportation (MDOT) partnered with the FHWA and the American Automobile Association (AAA) to develop a 7.4 mile "showcase roadway" (Figure 12). During the conference, tours were organized that allowed attendees to see first-hand selected solutions that benefit elderly drivers.

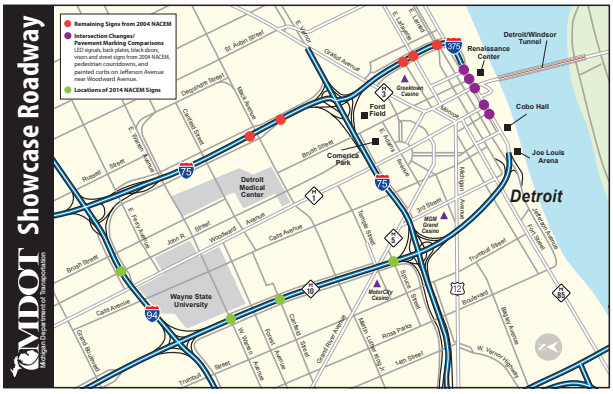

Figure 2. Older Driver Showcase Roadway in Detroit

For the 2014 NACEM, MDOT invested $137,000 to upgrade five signs to show the side-by-side comparison of the Type XI sheeting versus Type III sheeting and Clearview™ font versus Series E Mod fonts. MDOT also painted curb islands and curb radii to improve visibility. These enhancements supplemented the safety countermeasures still in place from the 2004 conference including traffic signal backplates, retroreflective borders, pedestrian countdown signals, arrow-per-lane signing, and upgraded sign sheeting for warning signs. With the old and new traffic control devices (TCDs) placed side-by-side, conference attendees could compare the differences.

Upgraded TCDs designed to enhance visibility and increase safety by being easier to read, notice, or understand by older road users, were included in MDOT's showcase roadway. These improvements included:

- Implementation of fluorescent yellow sheeting for warning signs;
- Use of the Clearview™ font on guide and street name signs;
- Application of enhanced borders on regulatory signs;
- Arrow-per-lane guide signing for highways;
- Application of backplates with retroreflective borders on traffic signals;
- Installation of Light Emitting Diode (LED) lenses in the signals, instead of the standard incandescent lenses. Addition of new pedestrian signing that has shown to be more easily understood by both pedestrians and drivers;
- Installation of pedestrian countdown signals. These allow traffic engineers to maintain the traffic flow, while informing pedestrians about the time available to cross the intersection. This is an especially important improvement for older adults, who typically walk slower than the average adult. This gives them information to allow them to decide for themselves whether or not they have time to cross;
- Painting wider edge and lane lines and some curbs to increase their visibility (6-inch longitudinal pavement markings);
- Application of LED lenses in some warning lights to improve the visibility of curves; and
- Additional markers to provide direction to drivers where lanes merge.

Government agencies and transportation research facilities around the country researched and extensively tested each of the various TCDs displayed in the 7.4-mile-loop. They found that as drivers age, the ability to read signs becomes increasingly difficult, which is the main reason why the florescent yellow sheeting was used on warning signs instead of high-intensity yellow sheeting[1]. Another example of specific research that supported the implementation of certain TCDs was conducted by the Texas Transportation Institute and the New Hampshire Department of Transportation for improving the legibility of guide signs. The results showed that the most cost-effective method to improve visibility on green guide signs was to use Type IX sheeting for the white legend and Type III sheeting for the background, which is what MDOT then used for guide signs on highways around the loop.

Figure 3. Signal Backplates with No Reflective Strip (left) and Signal Backplates with Yellow Retroreflective Strip (right)

Other departments of transportation can implement these improved TCDs in much the same way that MDOT did, although the cost will depend on the scale of implementation. In 2004, MDOT budgeted $250,000 for the upgrades to the TCDs in the 7.4-mile demonstration loop, which included replacing 25 warning signs with brighter sheeting on arterial roads and freeways, installing backplates at 4 signalized intersections, and installing pedestrian countdown signals at 3 crosswalks. The City of Detroit replaced eight older street signs that were using 5 $^{3}/_{8}$-inch Series C lettering with street signs using Clearview™ 5W lettering. All TCD upgrades on the showcase road were considered "low cost" improvements.

Many of these implementations were for purposes of demonstration. For example, several traffic signals were modernized on this showcase roadway as real-world examples of traffic signals with backplates. Two different styles of backplates were used; one was black with no reflective strip, and the other was black with a 3-inch yellow retroreflective strip (Figure 3).

1 Benekohal, R.F., P. Resende, E. Shim, R.M. Michaels and B. Weeks., Highway Operations Problems of Elderly Drivers in Illinois. Illinois Department of Transportation and FHWA, 1992

As a result of the showcase roadway, MDOT has updated its standards and now uses:

- Clearview™ font on all guide signs;
- American Society for Testing and Materials (ASTM) Type IV sheeting on background on all guide signs;
- ASTM Type XI sheeting for white legends on overhead guide signs and ASTM Type IV sheeting for white legends on ground mounted signs;
- ASTM Type IX fluorescent sign sheeting for all warning signs;
- Six-inch pavement marking edge lines;
- Box span traffic signal displays: a new method for positioning traffic signals in an intersection by arranging traffic signals in a rectangular shape instead of diagonally across an intersection; and
- Pedestrian countdown signals.

As a follow-up to the implementation of these engineering improvements, MDOT has initiated research with Western Michigan University. The research will develop safety performance functions and crash modification factors for four of these improvements: Clearview™ font, ASTM Type IX fluorescent sign sheeting for warning signs, box span traffic signal displays, and pedestrian countdown signals.

For additional information:

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Adaptive LED Lighting in New Zealand

Nighttime driving can become an increasingly difficult task as people age. The absence of roadway lighting makes it challenging to see hazards and the path of the road. Too much lighting can create a detrimental glare. To help drivers navigate during nighttime conditions, agencies can increase roadway delineation with retroreflective signs and markings. Another successful strategy being used in New Zealand is the use of adaptive LED lighting.

Figure 4. Adaptive LED Road Lighting

Source: Mike Jackett

Adaptive LED lighting (Figure 4) is lighting that may be changed depending on current conditions and is varied using modern computer control systems. The lighting can also be tailored to circumstances such as the predominant road users' demographic. Individual lights can be turned on and off. They can also be dimmed depending on the atmospheric conditions and the need for more or less road lighting. This method uses less electricity than standard lighting and will become more affordable over time. Adaptive LED lighting is becoming more prominent in many parts of the world, and the technology needed for implementation is currently being used in North America.

Adaptive LED lighting is part of New Zealand's Safe System approach, which includes the following objectives.

- Prioritize projects to ensure that limited funding is well spent.
- Eliminate high-risk situations.
- Design to reduce the chance and consequences of human error.
- Encourage driving speeds that are appropriate for conditions.

For additional information:

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Vernon, British Columbia: Older Driver Pilot Project

The Older Driver Pilot Project was a comprehensive city-wide study that looked at older driver safety from a holistic perspective. The pilot project was a community initiative funded by the Insurance Corporation of British Columbia (ICBC) in the city of Vernon, British Columbia.

Between now and 2030, the number of residents over the age of 65 in British Columbia is expected to grow to almost a quarter of the population. The ICBC conducted an analysis of the entire province of British Columbia to see where the aging population was based and found that Vernon had a disproportionately high percentage of residents over the age of 65.

Focus groups with Vernon's seniors were conducted at the beginning of the project. The information gathered from the focus groups was combined with an analysis of the ICBC's claims data to identify and target problem sites within the city. A multi-disciplinary team conducted Road Safety Audits (RSAs) at these sites to identify the key issues and to determine the proper safety countermeasures that should be applied. The RSAs showed a number of concerns such as inadequate sight distances, faded crosswalks, small wording on signs, and narrow sidewalks. A majority of these issues was the result of limited city funding available for improvements.

Figure 5. Senior Focus Group

The RSAs were unique in that they were conducted with a senior road user's perspective in mind. This pilot project identified both spot and systemic road safety countermeasures to improve older user safety. The ICBC funded many of the improvements and upgrades that were needed to make Vernon safer for older road users.

For additional information:

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Alberta Traffic Safety Guide to Accommodating Older Drivers

The Alberta Traffic Safety Guide to Accommodating Older Drivers is a practitioner guide that provides a set of strategies for transportation agencies in Alberta, Canada, to address and safely accommodate aging drivers. Although overall fatal and injury crashes were decreasing, data showed that the involvement of older drivers in serious collisions was growing in both proportion and frequency, which was and is expected to continue as the "Baby Boom" generation ages. This guidebook was developed as part of an effort to make the road environment responsive to the needs of aging drivers.

Figure 6. Curve Delineation

The development of this guidebook was funded by the Canadian Automobile Association club in Alberta, called the Alberta Motorist Association. The 2001 edition of FHWA's *Highway Design Handbook for Older Drivers and Pedestrians*[2] was used in combination with other literature and local workshop inputs to develop the guidebook. The purpose of the guidebook is to present a comprehensive list of traffic safety practices that benefit the aging driver. Although many of the enhancement practices were drawn from the FHWA document, they were evaluated against Canadian and Albertan guidelines and standards. The recommendations in the guidebook include: channelization, slotted left-turn lanes, left-turn signalization, right-turns, street name signing, stop- and yield-control signing, traffic signals, roundabouts, and curve delineation (Figure 6).

The guidelines are meant to be used by agencies in areas with high proportions of older drivers, but can also be used in all locations to accommodate older drivers as a general policy. The Alberta Strategic Highway Safety Plan (Figure 7) has a section dedicated to older drivers, and the province is required to consider the concepts included in the Traffic Safety Guide to Accommodating Older Drivers in all transportation projects. The guidelines are meant to act as a reference to supplement existing standards, not to replace them. There is currently an initiative to begin applying these safety concepts on a systemic basis.

Figure 7. Alberta Traffic Safety Plan 2015

Source: Wendy Doyle, Alberta Transportation, Office of Traffic and Safety.

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[2] The FHWA *Highway Design Handbook for Older Drivers and Pedestrians* was updated in 2014 and given a new title. Detailed information on the newest edition can be found in this guide.

Collaboration Between Law Enforcement and Public Health Organizations: The Cognitive Assessment Tool

Age-related driving impairment is a serious and growing public health and safety problem. Older drivers have crash rates per mile driven similar to teenage boys, but have more than four times the fatality rate that younger drivers do. Law enforcement officers, who have traditionally been lenient with older driver violators, play an important role in identifying cognitively impaired drivers. Older drivers with cognitive impairments often exhibit erratic driving behaviors resembling a DUI; however, it can be difficult to distinguish cognitive impairment during a traffic stop without a targeted assessment.

The Training, Research and Education for Driving Safety (TREDS) group at the University of California (UC), San Diego, collaborated with the California Highway Patrol and the California Department of Motor Vehicles (DMV) to develop and deliver the POST-certified (Peace Officer Standards and Training) training, Law Enforcement's Role in Older Driver Safety. The Driver Orientation Screen for Cognitive Impairment (DOSCI) tool for law enforcement was developed as part of this training to aid in the identification of cognitive impairment at traffic stops. The DOSCI tool was validated at the UC San Diego Alzheimer's Disease Research Center. The training program and the DOSCI tool provide a model for how law enforcement and public health organizations can work together to keep the public safe as drivers age and are driving longer.

At a traffic stop of the potentially impaired driver, the DOSCI guides the officers to first screen for intoxication then to rule out any medical issues. Once these are ruled out, the officer is to conduct a nine question exam to determine the driver's orientation of person, place, and time. The questions include the driver's date of birth, full home address, state and town currently in, time estimate (within an hour), day of week, and the current date. The DOSCI tool includes suggested actions based on the score. The purpose of the tool is to guide and aid the officer, but officers are also expected to use their own judgment.

Figure 8. Law enforcement screening driver for cognitive impairment with DOSCI tool

Source: TREDS - Training, Research and Education for Driving Safety, University of California, San Diego

In California, over 2,500 officers are currently trained on how to use the DOSCI tool. In surveys administered immediately after training, 89 percent responded they were likely or very likely to incorporate the DOSCI into their assessment of older drivers, and 92 percent responded that the results of the DOSCI will help in preparing the DMV "Notice for Priority Re-Examination of Driver." Officer interviews conducted 2 years after the training were equally positive. The TREDS training, with the DOSCI tool, has been well received, and found to be feasible and useful in the field. Funding for this program was provided by a grant from the California Office of Traffic Safety through the National Highway Traffic Safety Administration.

For additional information:

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Maryland's Multi-tiered System to Assess Medical Fitness

There are times when a person's medical condition may require an assessment to determine their ability to safely operate a vehicle. The Maryland Motor Vehicle Administration (MVA) has a multi- tiered system for referring, screening, and evaluating an individual's medical fitness to drive. The mission statement of the MVA is to provide exemplary driver and vehicle services that promote Maryland's mobility and safety while enhancing process and product security.

The use of a Functional Capacity Screening Test (FCT) has become routine in Maryland. The FCT screening consists of a short series of tests that measure basic visual, cognitive, and physical abilities that are needed to safely operate a motor vehicle. While FCT screening cannot predict a safe or unsafe driving experience, poor results can be a warning sign that a person is placing themselves, or others, at a higher risk when driving. A driver's license cannot be suspended simply because of poor performance in one or more segments of the FCT; however, poor test scores are a concern and may cause the reviewer to require a driving skills test with the MVA. FCT screenings are recommended for drivers who are referred to the Medical Advisory Board (MAB) or the Division of Driver Wellness and Safety because of concerns about physical and mental decline that can affect their ability to drive safely.[3]

The MAB is composed of physicians from various medical specialties who assess an individual's medical fitness to drive when there is a medical condition that can impact the person's ability to safely operate a vehicle. The MAB reviews the medical information of drivers and then provides advice and recommendations to the Driver Wellness and Safety Division of the MVA. Each case is reviewed on an individual basis.

When a person is referred to the MAB for evaluation, they review pertinent medical information from the individual's personal physician(s) or other treatment provider(s), since those clinicians are the ones most familiar with the individual's condition. Upon review of those materials, the MAB may request additional information or evaluations. The MAB does not perform medical examinations. They may, on occasion, request a personal interview with an individual before a recommendation is made to the Driver Wellness & Safety Division of the MVA, who then makes the final decision whether to suspend a driver's license.

Approval by the MVA's Driver Wellness & Safety Division and/or the MAB is required if a person has any of the conditions listed below, which may affect their ability to drive. If someone has one of these medical conditions, they must notify MVA when the condition is diagnosed or when applying for or renewing a driver's license:

[3] Maryland Department of Transportation, Motor Vehicle Administration. Accessed November 17, 2014. http://www.mva.maryland.gov/safety/older/fct-screening.htm

- Cerebral Palsy
- Diabetes requiring insulin
- Epilepsy
- Multiple sclerosis
- Muscular dystrophy
- Irregular heart rhythm or heart condition
- Stroke, "mini-stroke," or transient ischemic attack
- Alcohol dependence or abuse
- Drug or substance dependence or abuse
- Loss of limb or limbs
- Traumatic brain injury
- Bipolar disorder
- Schizophrenic disorders
- Panic attack disorder
- Impaired or loss of consciousness, fainting, blackout, or seizure
- Disorder which prevents a corrected minimum visual acuity of 20/70 in at least one eye and a field of vision of at least 110 degrees
- Parkinson's disease
- Dementia, for example, Alzheimer's disease or multi-infarct dementia
- Sleep disorders, for example, narcolepsy or sleep apnea
- Autism

Depending on the severity and progress of a medical condition, individuals may be re-evaluated at various intervals. In many cases, drivers whose license privileges have not been approved or have been suspended may be approved at a later time when their medical condition improves.

For additional information:

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Florida's Aging Road User Strategic Safety Plan

Aging Road User Strategic Safety Plan Emphasis Areas:

- Advocacy and Policy
- Aging in Place
- Assessment, Remediation, and Rehabilitation
- Data Collection and Analysis
- Licensing and Enforcement
- Other Road Users
- Outreach and Education
- Prevention and Early Recognition
- Program Management, Evaluation, and Resources
- Transitioning from Driving

Over 18 percent of the population in Florida is over age 65 and by the year 2030, this demographic is predicted to increase to 27 percent. To address the transportation safety challenges of the State's aging population, the Florida DOT and the Pepper Institute on Aging and Public Policy formed Florida's Safe Mobility for Life Coalition and together developed an *Aging Road User Strategic Safety Plan*.[4] The Safe Mobility for Life Coalition is a statewide alliance of 28 member organizations that represent the fields of engineering, enforcement, safety, health, transportation, and aging. A central goal of the *Aging Road User Strategic Safety Plan* is to reduce the number of driving-related injuries and fatalities among older drivers in Florida. The plan also helps aging Floridians maintain their independence and remain active in the community even when driving is no longer feasible. To meet these goals, the plan includes 10 Emphasis Areas that balance the safety and mobility needs of Florida's aging population.

During the plan's development process, coalition members met four times between August 2010 and September 2011; the emphasis area teams met twice. During these meetings, members developed goals, objectives, performance measures, and strategies for implementing improvements in each emphasis area.

Some of the objectives identified in the plan include:

- Increase the number of drivers who are proactive about staying safe on the road;
- Increase the number of livable communities in Florida;
- Increase communication opportunities with elected officials to promote policies that enhance safety, access, and mobility for aging road users;
- Increase the statewide capacity of driver rehabilitation specialists; and
- Identify and implement effective design elements and safety countermeasures to benefit aging vulnerable road users.

[4] The Aging Road User Strategic Safety Plan. Accessed December 29, 2014. http://www.safeandmobileseniors.org/pdfs/FlagingRoadUserStrategicSafetyPlan.pdf

In addition to the expertise offered by the Coalition, three focus groups were conducted to obtain stakeholder input on the plan. Finally, to identify the habits, needs, and concerns of Florida's aging road users, a survey was conducted with Florida residents age 50 and older. The results were used to establish a baseline for the strategic plan and further refine the plan's strategies. Survey respondents indicated that the availability of transportation options, planning for transitions away from driving, awareness of Coalition resources and safety events, and general safety concerns like distracted driving are critical issues for aging road users. In response, the strategic plan incorporates objectives and strategies to address these issues.

As the Coalition began implementing the plan, one of the first resources developed was *Florida's Guide for Aging Drivers* (Figure 9). This guide is designed to help older Floridians continue driving as long as safely possible and shares information to help them prepare for their transportation needs should they need to stop driving. Ultimately, the *Aging Road User Strategic Safety Plan* was aligned with the Florida DOT *Strategic Highway Safety Plan*[5] and is included in the emphasis area that focuses on at-risk drivers.

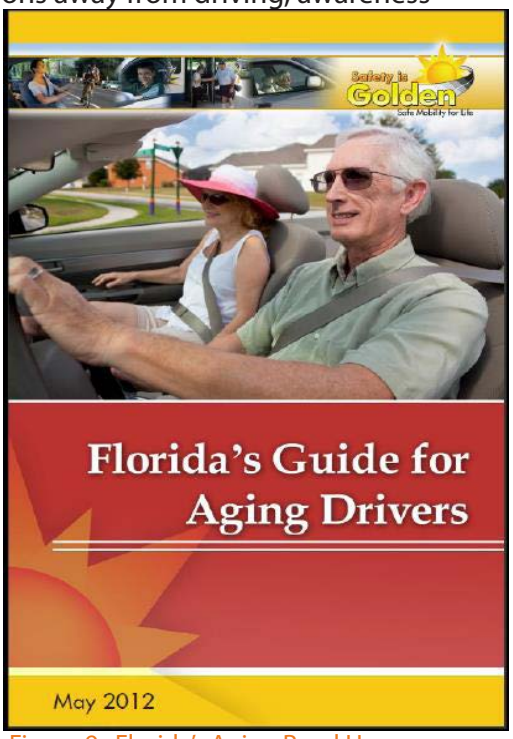

Figure 9. Florida's Aging Road User Strategic Safety Plan

Source: Florida Department of Transportation

For additional information:

Agency: Florida Department of Transportation
Contact: Gail Holley, Safe Mobility for Life Program Manager
Telephone: 850-410-5414
Email: gail.holley@dot.state.fl.us

[5] Florida Strategic Highway Safety Plan. Accessed December 29, 2014. http://www.dot.state.fl.us/safety/SHSP2012/StrategicHwySafetyPlan.pdf

Michigan's Guide for Aging Drivers and Their Families

Since 1997, the Michigan Senior Mobility Work Group, a statewide group of safety partners, has been addressing the challenges of the State's aging population. Organized under the direction of the Governor's Traffic Safety Advisory Commission, the goals of the Senior Mobility Work Group are to improve the safety and mobility of aging Michigan residents even when driving is no longer a safe option, and reduce serious injury and fatal crashes involving older drivers. To assist with meeting these goals, the Michigan DOT partnered with the Michigan Department of State, the Office of Highway Safety Planning, and AAA Michigan to publish and distribute *Michigan's Guide for Aging Drivers and their Families* (Figure 10).

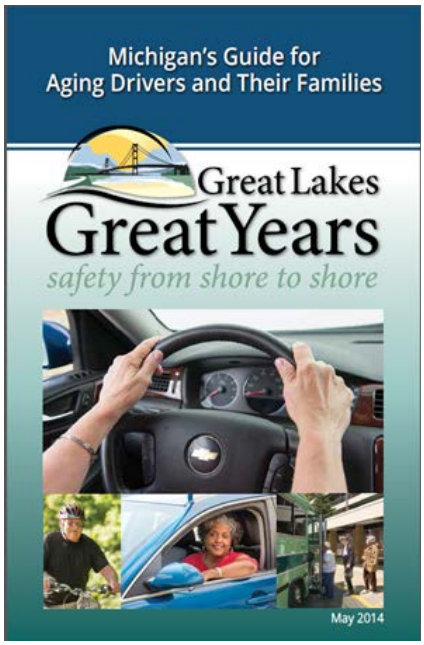

Figure 10. Michigan's Guide for Aging Drivers and Their Families

The guide is a resource for Michigan's aging drivers and their families and caregivers. It emphasizes the importance of understanding how aging and age-related changes affect the ability to drive safely. A portion of the guide includes information to help establish whether a person is safe to drive. Tools include a driving self-assessment, a list of behaviors that may affect safe driving, guidance on partnering with the medical community, and how to request a driver evaluation. The guide also includes strategies to improve the safety of older drivers such as:

- Drive only during daylight;
- Avoid rush hour and heavy traffic;
- Make three right turns instead of a left turn or make left turns at traffic signals; and
- Map out safe routes that include well-lit streets, less traffic, left turns at traffic signals, and clear signs.

The guide also reminds readers that not all road users are drivers; many people walk, ride bicycles, or motorcycles. Accordingly, the guide includes safety strategies for these more vulnerable users, as well as winter safety strategies.

The guide concludes with a section on the impact of age-related ability changes on driving. Driving presents particular challenges to older people because of changes in their vision, cognition, and physical function. To address these impacts, there is detailed information on the types of changes that occur with vision, hearing, medication, cognition, dementia, and physical condition and how these changes impact safe driving. There is also guidance for drivers who must limit or stop driving for their safety and the safety of others. The guide encourages aging drivers to develop a transportation plan that incorporates alternative transportation options such as walking, senior shuttles, and bus services for that time when they may no longer be able to drive.

For additional information:

Agency: Michigan Department of Transportation
Contact: Kimberly Lariviere, Strategic Highway Safety Engineer
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Email: larivierek@michigan.gov

CarFit

CarFit is an educational program created by the American Society on Aging and jointly developed by AAA, AARP, and the American Occupational Therapy Association. The program is designed to help older drivers find out how well they fit their vehicle, highlight actions they can take to improve their fit, and promote conversations about safety and mobility. It also provides information and materials on resources that can enhance their safety as drivers and increase their mobility in the community.

Older drivers may contend with physical changes that affect their driving. For example, a reduced range of motion can limit head rotation and visual impairments can delay recovery from glare. Older drivers are also more likely to be killed or seriously injured in a crash due to greater fragility.

While driver safety programs address cognitive abilities and skills, older drivers can also improve their safety by ensuring their vehicles are properly adjusted for them. At a CarFit event, a trained professional asks simple questions and completes a 12-point CarFit checklist. This list includes checking items such as the position of the vehicle's mirrors, the steering wheel tilt, and the driver's position to the brake pedal. The entire process takes 20 minutes and drivers leave with recommended car adjustments and adaptations as well as a list of resources in their area. By making individual adjustments to reach their best person-to-vehicle fit, drivers can better benefit from their vehicle's safety features and have better control behind the wheel. For example, good foot positioning on the gas and brake pedals is important. If the driver is reaching to press on the pedals, it can cause fatigue in the leg and slow reaction times. The top opportunities for a better fit include steering wheel tilt, head restraint position, and improved line of sight.

A good car fit means:

- Clear line of sight over the steering wheel.
- Room (at least 10 inches) between the driver's chest and air bag in the steering wheel.
- Properly adjusted head restraint.
- Easy access to gas and brake pedals.
- A seat you fit in safely and comfortably.
- A seat belt that holds you in the proper position and remains comfortable while driving.

CarFit was pilot tested in 2005 with more than 300 older drivers. Based on findings from the completed checklists and follow-up surveys with participants, the program is proving to be effective, with 37 percent of participants having identified at least one critical safety issue that needed to be addressed. Survey respondents indicate that as a result of their participation in CarFit, they have made a change to improve the fit to their vehicle, their use of safety features in their vehicle, and/or willingness to discuss their driving with family or health care providers.

There is no charge to participate in a CarFit event. A complete list of CarFit events scheduled throughout the country can be found by visiting www.car-fit.org.

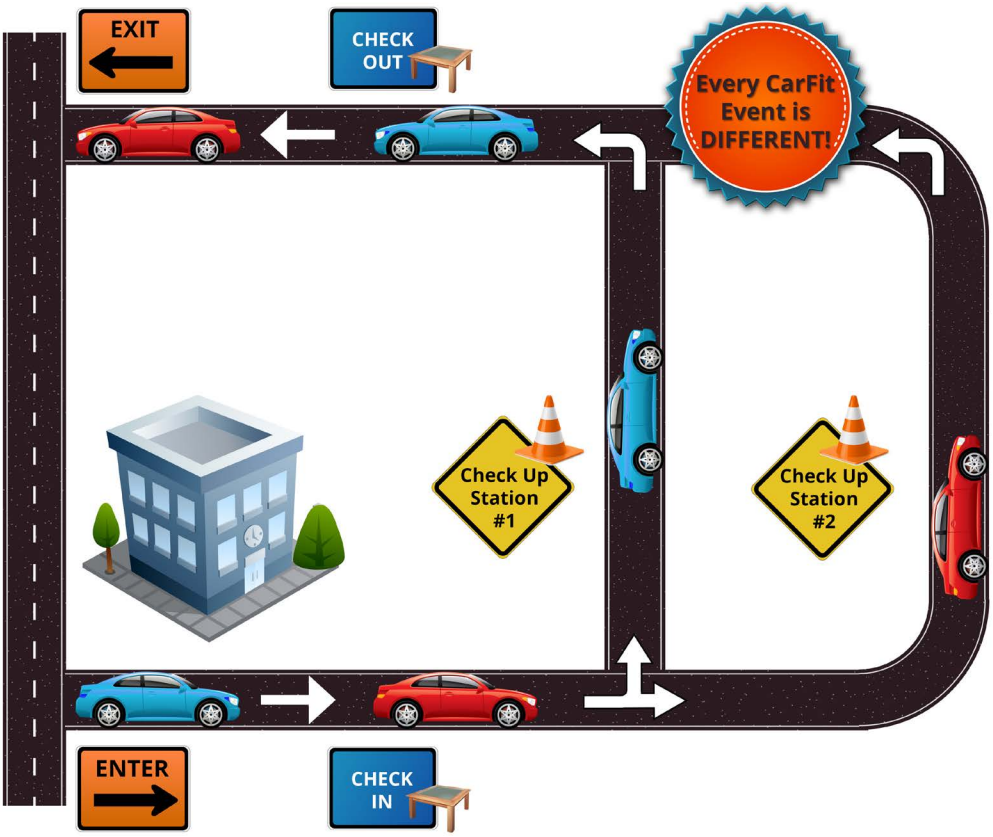

Figure 11. CarFit Process

For additional information:

Agency: AARP Driver Safety
Contact: Frank Carroll, Curriculum Development
Telephone: 202-434-3919
Email: fcarroll@aarp.org

Using Driving Rehab Specialists to Help Older Drivers Keep the Keys

By the year 2020, there will be more than 40 million licensed drivers 65 and older. It is essential for occupational therapy practitioners as well as driving rehab specialists (DRSs) to help older adults address community mobility. Personal mobility is critical to healthy aging, quality of life, and independence, therefore, it is important to explore the resources that are available to help aging adults "keep the keys."

Genesis Rehab Services (GRS) provides physical therapy, occupational therapy, speech therapy, respiratory therapy, and wellness services for the older adult population. GRS partners with nursing centers, assisted living facilities, independent living facilities, hospitals, home health companies, adult day care programs, and outpatient clinics to provide comprehensive therapy services. They employ over 18,000 therapists and assistants in approximately 1,500 rehabilitation gyms which operate in 46 States and the District of Columbia and that see 45,000 patients each day.

Figure 12. Driving Rehab Specialists Conduct an In-vehicle Evaluation

Courtesy of *Driving Rehabilitation by Genesis Rehab Services*

GRS employs DRSs who work with clients to help them gain the skills they need to stay safe, comfortable, and confident behind the wheel of their car, even as they experience age-related physical and mental changes. Their goal is to keep clients as mobile, independent, and safe as possible for as long as possible.

GRS provides a variety of services for older adult drivers, including driving wellness consultations, specialized in-vehicle evaluations, client education and support, and training and specialized adaptive driving equipment. In the case of a client needing to cease driving, either temporarily or permanently, GRS will help them transition from driver to passenger. DRSs are highly-skilled occupational therapists with advanced training in driving rehabilitation. Their role is to guide and support clients through the driving evaluation, training, and if necessary the transition process to non-driver. They also work with clients to set reasonable goals for driving. GRS works with licensed, older adult drivers with a wide range of medical conditions, including:

- Cataracts
- Congestive heart failure
- Dementia
- Diabetes
- Diabetic retinopathy
- Glaucoma
- Heart attack
- Knee replacement
- Left foot drop
- Mild cognitive impairment
- Mini stroke
- Multiple sclerosis
- Neuropathy
- Parkinson's disease
- Pulmonary disease
- Recent falls
- Sleep apnea
- Stroke
- Syncope
- Traumatic brain injury

Currently, GRS has trained 10 DRSs and educated staff at approximately 100 facilities on the occupational therapist role in driving and community mobility. The GRS Driving Program is dedicated to raising general awareness of issues that face older adult drivers, which is the first step in making this movement successful and helping seniors keep their keys.

For additional information:

Agency: Genesis Rehab Services
Contact: Susan Touchinsky, Director of Driving Rehabilitation
Telephone: 484-650-2280
Email: susan.touchinsky@genesishcc.com

Figure 13. Process to Get Started with Driving Rehabilitation

Courtesy of *Driving Rehabilitation by Genesis Rehab Services*

New and Improved AARP Smart Driver™ Course

AARP Smart Driver™ Course can help to:

- Update driving skills and knowledge of road rules and road hazards.
  - Maintain proper following distance.
  - Safely change lanes and make turns at intersections.
- Learn about normal age-related physical changes and how to adjust driving habits to compensate.
- Reduce chances of receiving a traffic violation, being involved in a traffic crash, or becoming injured.
- Bring awareness of the effects of medications on driving and driver distractions such as eating, smoking, and cell phone use.

In 1979, AARP initiated "55 Alive" to help keep older drivers safe while on the road. In 2014, AARP Driver Safety launched a new and improved refresher course called AARP Smart Driver™, available nationwide in a classroom or online setting. The curriculum is based on new research in adult learning, consumer interest, and behind-the-wheel data gathered through driving simulators. The new course teaches safety strategies and defensive driving methods using adult learning principles. Participants learn about new traffic laws and rules of the road, how to safely navigate adverse weather conditions, and information on automobile technology. The course also provides guidance on driving techniques such as the safest way to change lanes and make turns at intersections, maintaining a safe driving distance, the effects of medication on driving, and reducing distractions such as cell phone use.

The process used by AARP Driver Safety to develop the course curriculum can be applied by other organizations. When developing the course curriculum, AARP Driver Safety collaborated with experts in mobility, aging, technology, and vehicle and driver safety. Data-based research led to changes in the course content to focus more on areas where older drivers can benefit from additional training. These areas include roundabouts, pavement markings, stop sign compliance, red light running, and driver behavior (such as seat belt use and speeding). AARP Driver Safety also conducted focus groups and incorporated participant feedback into the course revision. The course was field tested prior to its official launch and a simulator study validated its effectiveness at reducing driver errors.

The end result, a course designed with the participant in mind, is different in many ways from its predecessors. For example, course materials are in a new format that features reader-friendly print types and full-color pages. Products developed as part of the new course include a participant guidebook, instructor manual, course video, PowerPoint presentation, an instructor self-preparation and review guide, and an online Driving Resource Center at www.aarp.org/drc. Surveys conducted by AARP since launching the new course indicate that the updated curriculum is effective and drivers are changing their behavior.

Participants can take the course online at www.aarpdriversafety.org or find a classroom course at www.aarp.org/findacourse.

For additional information:

Agency: AARP Driver Safety
Contact: Frank Carroll, Curriculum Development
Telephone: 202-434-3919
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myride2

In 2010, the Area Agency on Aging 1-B[6] in Michigan partnered with Jewish Family Service to create ***myride2***, a "one-call, one-click" Mobility Management Service. ***myride2*** helps seniors and adults with disabilities in Oakland, Macomb, and western Wayne counties in Michigan find transportation options best suited for their individual needs. The program also provides information on safe driving, making the transition when driving is no longer an option, Complete Streets, and instructional information for riding the bus. Trained mobility specialists offer public, private, and volunteer transportation options, and can schedule rides.

myride2 offers a toll-free phone line and an interactive website (myride2.com) where people can search for transportation providers and request a ride. The program incorporates:

- A toll-free multi-lingual phone line;
- A system where the rider only has to provide personal information one time;
- An interactive web site where users can search for providers, request a ride, or get information; and
- Assistance with Americans with Disabilities Act applications.

myride2 was launched in May 2012 and the company received more than 1,600 calls in its first year alone. The program sponsors hope to expand their services in the future to assist veterans as well.

For additional information:

Agency: Area Agency on Aging 1-B
Contact: Roberta Habowski
Telephone: 248-262-9211
Email: rhabowski@aaa1b.com

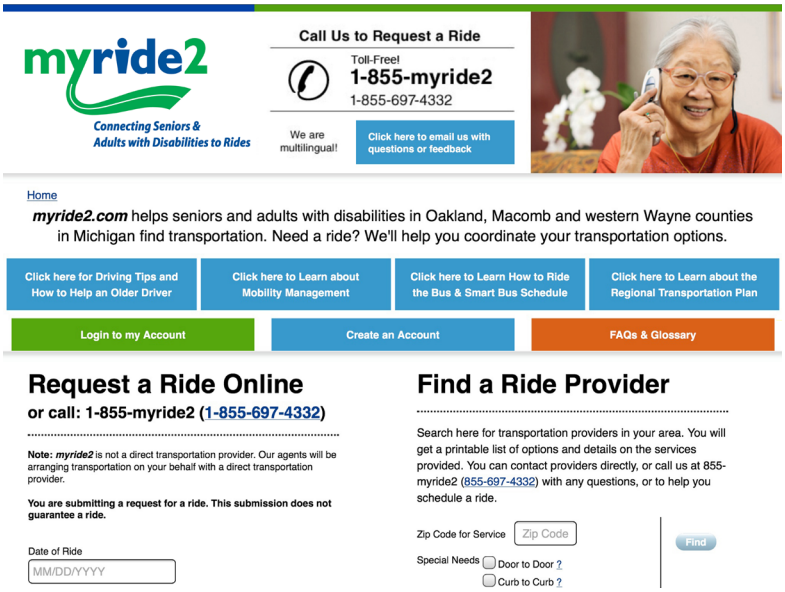

Figure 14. Homepage of the myride2 Website

Source: Area Agency on Aging 1-B

[6] The Area Agency on Aging 1-B is a non-profit 501(c)3 agency responsible for services to more than 620,000 persons age 60 and older residing in Livingston, Macomb, Monroe, Oakland, St. Clair and Washtenaw counties in Michigan. It is one of 16 area agencies in the state of Michigan.

Kansas City: Link for Care

Link for Care helps provide veterans and senior citizens with easy information and a variety of options for senior services. It is designed to be a community service for caregivers, individuals needing personal assistance, healthcare professionals, social workers, discharge planners, mental health professionals, and transportation services. Link for Care is a free online resource to search a variety of services in the greater Kansas City area comprising 9 counties, 119 cities, and 50 transportation services. Link for Care lists a total of more than 1,400 services. Though there are other resource guides available throughout the Kansas City Region, Link for Care is the only one to comprehensively list services in all the counties across multiple disciplines (transportation, health services, housing services, legal, etc.).

One of the convenient features of Link for Care is that it allows users to build a profile and save their favorite services. This characteristic allows users to simply log in and find the contact information for their favorite services without performing a follow-up search. There are future plans to install a trip planning tool on the website that will allow users to find services and then map the transportation to get them to the service provider and home again. The Kansas City Area Transportation Authority (KCATA) Call Center uses Link for Care if one of the region's transit agencies cannot provide a ride to a customer. The KCATA operator uses the website to help the customer find the best service that fits that individual's needs.

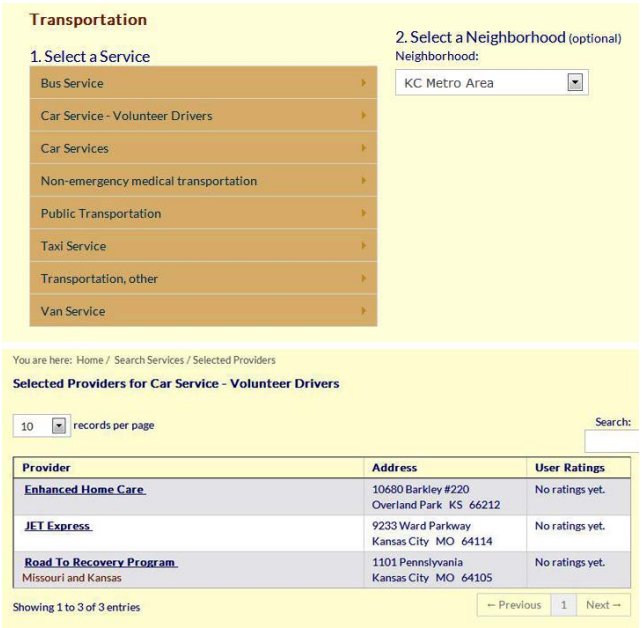

Figure 15. Results from a Sample Search on the Link for Care Website

The University of Kansas (KU) Medical Center, Mid-America Regional Council, and the KCATA Call Center have promoted Link for Care with an extensive public outreach and media campaign. Marketing strategies have included commercials on radio and television, newspaper advertisements, and information on Facebook and other social media platforms. The KU Medical Center conducts additional public outreach with "lunch-and-learn" sessions for hospital dispatch agents, train-the-trainer sessions, and information provided at various public fairs and festivals.

As the website was developed, focus groups were conducted with veterans, older adults, persons with disabilities, and service providers. Input obtained during these focus group sessions was used to assist with the design of the website. Link for Care went live in November 2013 and is maintained and managed by the Central Plains Geriatric Staff at the KU Medical Center, Landon Center on Aging. Since its launch, the site has had more than 4,000 unique visitors and the numbers continue to grow.

Figure 16. Homepage of the Link for Care Website

For additional information:

Agency: Mid-America Regional Council
Contact: Tyler Means, Transportation Planner
Telephone: 816-701-8261
Email: tmeans@marc.org

Source for all images on pages 26-27: The Landon Center on Aging at the University of Kansas Medical Center

Aging, Disability, and Transportation Agencies Working Together: Mobility Management in Wisconsin

In 2006 and 2007, the Wisconsin Department of Transportation (WisDOT) collaborated with Regional Planning Commissions to develop Coordinated Public Transit-Human Services Transportation Plans at the State and county level. As a result of the plans, several initiatives were started. In 2008, WisDOT developed a formal training program for mobility managers to build their awareness of resources and best practices. In 2009, a process to certify mobility managers was developed. Requirements for certification include completion of the training program, 1 year of field experience, and achieving a passing score on the final exam. The formal certification adds to the mobility managers' credibility as well as the value of their position, knowledge, and activities within their local communities. Mobility managers in Wisconsin operate out of aging units, independent living centers, transit facilities, employment centers, and other non-profit organizations. These individuals typically serve in a wide variety of roles, including operating volunteer drivers, paratransit, and other transportation services; coordinating between agencies; and educating communities about transportation options. One of the most valuable aspects of having a mobility manager in each county or region is that there is a single point of contact for customers.

In 2010, a group of mobility managers formed the Wisconsin Association of Mobility Managers (WAMM) to continue the support networking, training, and certification of among mobility managers. WAMM connects mobility managers across the state, facilitating the dissemination of best practices and resources and providing mobility management training and certification. WAMM helps connect local mobility managers with their counterparts across the state, which has led to an increase in the spread of information and best practices and offers the potential for pooled resources and innovative solutions.

While WisDOT was instrumental in beginning the mobility management movement, WAMM has since taken on the responsibility for training and communication with mobility managers in the state. WAMM partners with the other transportation associations in the state representing transit, taxicab owners, and specialized medical vehicles, as well as WisDOT.

WAMM is a 501 (c) 6 non-profit organization with a volunteer board of directors. Membership fees are assessed to anyone in the State or Nation who wants to join. These fees are used to create training opportunities to maintain mobility manager certification standards. WAMM has committees to coordinate training, track membership, and develop resources for more effective policy advocacy. New mobility managers can be matched with a mentor through the WAMM Mentorship Program. WAMM organizes members and responds to policy and programmatic issues, for example, non-emergency Medicaid transportation brokerage, volunteer driver program challenges, long-term stable funding, regional transit authorities, and livable communities.

Mobility management is a priority in Wisconsin, and WisDOT and WAMM continue to collaborate and work closely together to increase regional transportation options, expand service areas, develop coordination agreements across transportation programs, and increase knowledge about model programs.

For additional information:

Agency: Dane County Department of Human Services
Contact: Norah Cashin, Transportation Manager
Telephone: 608-242-6486
Email: cashin@countyofdane.com

Agency: Greater Wisconsin Agency on Aging Resources
Contact: Carrie Porter, OAA Consultant
Telephone: 608-228-8092
Email: carrie.porter@gwaar.org

A Bus is a Bus: Making Efficient Use of Unused Transportation Avenues

Many elderly would-be drivers rely on public transportation as their primary means of mobility. At the same time, the need for transit services is on the rise, leading to an overburden of existing transit systems. This has led the Shiawassee Area Transportation Agency (SATA) to extend existing transit services by employing an underutilized, sizable bus system—church vans and buses.

SATA is the bus service that serves the areas in and around Michigan's Shiawassee County. The county has a geographical area of 541 square miles and a population of 70,648, according to the 2010 census. In 2008, SATA partnered with area churches to use their buses and vans. The premise is simple, yet powerful—use church buses for public transport when they are not being used for their primary church function on Sundays and Wednesday nights. It appears to be a win-win for all involved—churches are able to recruit volunteer drivers directly from their congregations and these volunteer drivers save SATA money that they can then use for other needs. In return, SATA occasionally helps local churches with their transportation needs—usually in the form of one-time, large-group trips for church members—by coordinating passenger needs and helping to create a schedule. The church then uses its own vehicle and a volunteer from the congregation follows the schedule and directions given by SATA.

SATA has also provided the conduit to match individuals needing transportation with a member of a church congregation who volunteers for that individual on an on-going basis.[7] This happens outside of the program described; however, it goes to show the mutual benefits from a partnership between a transit authority and local non-profit organizations that support and encourage volunteerism, especially one or more churches.

This program maximizes the efficient use of community-wide buses by pooling together vehicles already dedicated to general public transport. Church buses happen to be the largest fleet of buses available for use behind school buses. The ownership is not a factor to users; a bus is a bus, as long as it takes users where they want to go.

SATA provided 93,336 passenger trips per year for the fiscal year 2011. The program currently has one bus and two vans committed, but this is likely to change in the future as SATA intends to increase participation dramatically during 2015. There are 120 churches in Shiawassee County, potentially providing for 25 or more additional buses/vans to be used in this program.

For additional information:

Agency: Shiawassee Area Transportation Agency
Contact: MaLissa Schutt, Mobility Manager
Telephone: 989-725-9303
Email: mschutt@satabus.org

[7] SATA menu of transportation solutions. Accessed December 29, 2014. http://www.michigan.gov/documents/mdot/VolunteerServiceAmongMenuOf_Transp_Solutions_SATA_Michigan_409378_7.pdf

ITN*America*

The Independent Transportation Network (ITN) began in 1995 in Portland, Maine, as the Federal Transit Administration's model for sustainable, community-based transportation for seniors. With support from AARP, the Transit IDEA Program, numerous private philanthropies, and corporate sponsors, ITN*America* has helped more than 25 communities in 22 states start an ITN affiliate of their own. More than 1,600 volunteer drivers and 11,000 members have participated in the service, which combines the power of information technology and the strength of local support to create an efficient and financially sustainable solution to the transportation needs of seniors and their families.

ITN America is designed to recreate the comfort and convenience of private automobile ownership for seniors and to be sustainable without relying on taxpayer dollars for ongoing operating expenses. Through its *CarTrade*™ ITN helps seniors to trade vehicles that they no longer use to pay for their own rides. As part of the initiative the Transportation Social Security Program gives volunteers transportation credits in the system when they drive others, and the Road Scholarship Program encourages volunteers to donate these credits for low-income riders who cannot afford their share of the far. ITN supplements publicly funded transportation by using private automobiles and is available to seniors 24 hours a day, 7 days a week for any purpose, without restriction. Through innovative payment plans, ITN integrates previously inaccessible private resources to help pay for rides, storing the resources in personal transportation accounts, and sending members monthly account statements. No money ever changes hands in the vehicles. Merchants and healthcare providers participate through the Ride & Shop and Healthy Miles programs. Seniors and people with visual impairments describe ITN as "the next best thing to driving."

ITN*America* is working towards a national solution for a national problem:

- Seniors have the highest fatal crash risk of any group except teenagers.
- Seniors take 88 percent of trips in private automobiles.
- Seniors take fewer than 3 percent of trips on public transit.
- Nearly 55 percent of seniors live in communities without public transit.

With increasing concern for the safety and mobility issues of older drivers, many groups across the country are trying to find a solution. ITN*America* is the first and only national non-profit whose mission is to address these transportation needs. It accomplishes this mission through research, policy, and technology, and by supporting communities across the country through replication of the ITN.

Though pricing is structured so that a user pays more for on-demand service and more to ride alone instead of sharing, it is still affordable since 38 to 46 percent of its users have an income of less than $25,000 per year. Some other statistics on the program include:

- Approximately 43 percent of rides are for healthcare,
- The most common age of members is 86,
- About 80 percent of members are women living alone in the community, and
- Half of all riders report mobility impairments.

By a ratio of 10 to 1, people who take rides report that ITN's arm-through-arm and door-through-door transportation is inexpensive for the service they receive.

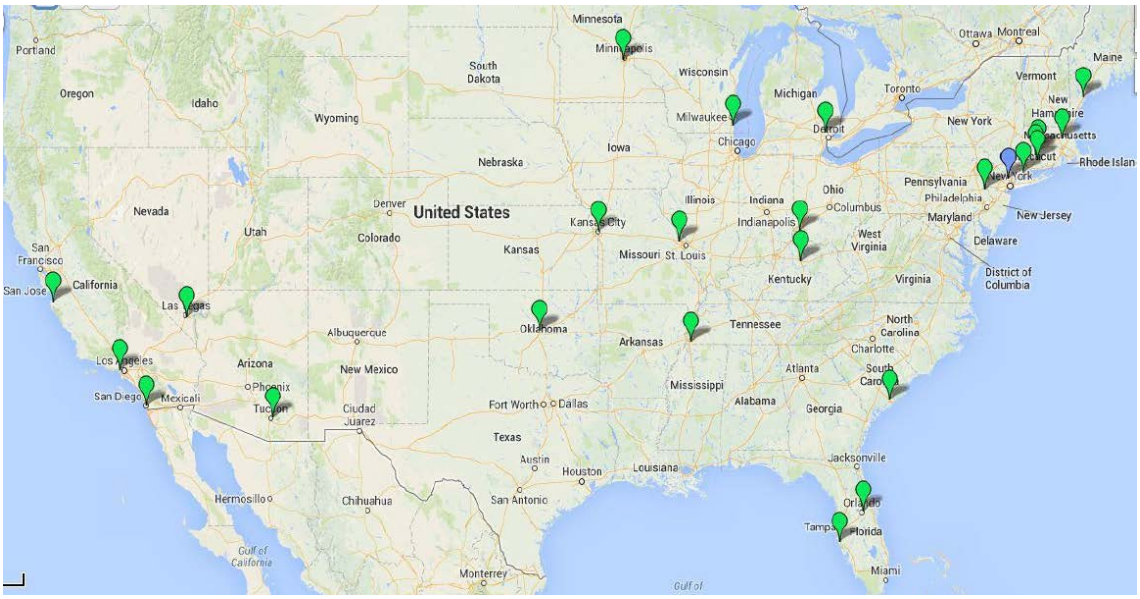

Figure 17. ITN*America* Affiliate Sites

For additional information:

Agency: ITN*America*
Contact: Katherine Freund, Founder & President
Telephone: 207-591-6926
Email: Katherine.Freund@ITNAmerica.org

New York City's Senior Pedestrian Focus Areas

Walking New York City's busy streets can be challenging, especially for older adults. Even though adults age 65 and older make up only 12 percent of New York City's population, they account for 39 percent of the city's pedestrian fatalities. In an attempt to combat this over-representation, in 2008, the New York City Department of Transportation (NYC DOT) identified areas with high concentrations of senior pedestrian crashes that resulted in fatalities or severe injuries and designated them Senior Pedestrian Focus Areas (SPFAs). These SPFAs received infrastructure improvements and pedestrian-focused changes to traffic operations, in order to increase safety for senior pedestrians, and by extension, all pedestrians in New York City.

The NYC DOT created the SPFA program entirely in-house, incorporating a three-step process. The DOT first performed data analysis in order to characterize crash trends—in this case, related to senior pedestrians. Once it was able to identify each SPFA, and knowing both the crash types and the crash locations, the DOT then reviewed each SPFA for any potential contributing issues. Once all the information had been assembled, the agency developed solutions to counteract the crash types.

Finally, NYCDOT installed the infrastructure improvements that would combat the safety challenge, such as:

- *Installing or replacing pedestrian ram*ps.
- *Adding curb or median extensions.* Curb extensions help protect pedestrians not currently crossing the street from cars that may drive onto the curb or median.
- *Designating a leading pedestrian interv*al. Leading pedestrian intervals provide an exclusive pedestrian walk phase to allow pedestrians movement through the intersection without interference from vehicular traffic.

Figure 18. Intersection daylights

- *Modifying walk signs to allow visible countdowns and more time for pedestrians to cross.* Walk signals were adjusted for the slower average pace of older adults, and countdown indications allow them to see exactly how much time is left to cross, enabling them to exercise their own judgment as to whether they can make it during the remaining walk time or whether they should just wait for the next walk phase.
- *Constructing pedestrian refuge islands within crosswalks at long, busy intersections.* Pedestrian refuge islands are raised medians normally located between opposing traffic lanes that offer a place for pedestrians to stand if they cannot cross an entire intersection during the pedestrian walk phase. Refuge islands turn one long crosswalk into two (or more) shorter ones. Since seniors typically walk at a slower rate than the average adult, installing pedestrian refuge islands makes crossing a long intersection much safer. This is especially true in a dense, urban setting, due to high traffic volumes, high vehicular speeds, and wide streets. These solutions became permanent infrastructure improvements and are accessed by all users as they attempt to cross these new, more pedestrian-friendly intersections. A pedestrian refuge island installed at the intersection of Northern Boulevard and Bowne Street in Queens has decreased pedestrian injuries by 45 percent.

- *"Daylighting" at intersection corners for better visibility*. This is the term for blocking out the parking spot closest to the crossroad, so that drivers on the road have a better view of pedestrians waiting to cross, as shown in Figure 18.
- *Implementing a Road Diet.* A Road Diet is the term for reducing the number of vehicle travel lanes and converting newly freed space into parking, bike lanes, landscaping, walkways, or medians. The NYC DOT implemented a Road Diet on Manhattan's Chrystie Street, which has resulted in a 66 percent reduction in pedestrian crashes at that location.
- *Installing rest locations through the City Bench Program*. The City Bench program installs new benches outside of senior centers, on main streets, and in front of any business that requests them, has adequate sidewalk width, and is willing to maintain them.

According to the NYC DOT, "Since the program began, annual senior pedestrian fatalities have decreased 19 percent citywide, from 58 senior fatalities in 2008 to 48 in 2012." [8]

Figure 19. Allerton Ave, Bronx, New York City: Road Diet with Left Turn Bays, Pedestrian Refuge Islands and Bike Lanes (installed 2009)

Source: Hillary Poole, NYC DOT

For additional information:

Agency: New York City Department of Transportation
Contact: Jesse Mintz-Roth, Senior Project Manager
Telephone: 212-839-7751
Email: jmintz-roth@dot.nyc.gov

[8] New York City DOT Safe Streets for Seniors. Accessed July 10, 2014. http://www.nyc.gov/html/dot/html/pedestrians/safeseniors.shtml

TimeBanking and Transportation

There are many ways to promote volunteering, but one new method, called TimeBanking has been expanding rapidly. TimeBanking is a new economic concept, in which, instead of trading money for goods and services, members of a TimeBank contribute their time towards services requested by other members, to earn hours. In exchange, those volunteers can then use the hours they accrue to request services from other members of the TimeBank.

Essentially, TimeBanks are community networks that provide service exchanges—for example, allowing one TimeBank member to earn an hour helping another member with their gardening, and then using that hour to offer a different TimeBank member to drive their child to soccer practice, who then earns an hour that they can use on whatever they want or need. TimeBank members can use their own time contributions providing a service for another member of the TimeBank as a de facto currency, tracked by the TimeBank, usually through an online system. Hour for hour, participants "bank" their time in order to receive goods or services from others within the program. This allows users access to goods or services they might not have access to otherwise and to be contributors as well as recipients of volunteer efforts.

Seniors need safe, reliable, and frequent transportation both to and from medical services. In order to promote volunteers to provide this transportation, the Dane County, Wisconsin Department of Human Services coordinated with a local TimeBanking organization, the Dane County TimeBank (DCTB). This allows patients to connect to volunteer drivers so they can receive transportation to and from their treatment centers, especially older adults living in rural areas who do not have access to public transportation.

The City of Madison is the urban center of Dane County, Wisconsin, surrounded by both suburban and rural areas. Some of these rural areas have population densities of between 1 and 5 people per square mile, which has resulted in a lack of readily available public transportation. Instead, thanks to the partnership between the Dane County Department of Human Services and the DCTB, senior transportation needs are being met in all areas of Dane County.

To find volunteers who can provide transportation services, the DCTB recruits, screens, and trains members who are qualified to be volunteer drivers for older adults needing transportation to local dialysis centers. The Dane County One-Call Center coordinates between the DCTB, dialysis centers and other needed services, and older adults needing transportation.

The Dane County Department of Human Services did not initiate the concept of TimeBanking, but instead put it to effective use to help patients in need of dialysis to receive such treatment. This practice could be implemented again virtually anywhere, as it requires only a TimeBank, or a system that keeps track of hours that TimeBank members contribute toward benefiting others—hours that can then be exchanged for service from others.

For riders, this service contributes to positive mental and physical health. Pairing senior riders with volunteer drivers diminishes feelings of social isolation which can lead to depression. The service contributes to riders' physical health as well; frequent, regular visits to needed medical services leads to better care, as doctors can more accurately track the progress of their patients and identify problems as soon as they may arise. This practice also increases riders' compliance with their treatment, now being held accountable by others besides themselves and their doctors.

For additional information:

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Seniors Training Seniors How to Use Transit

Figure 20. Walker Senior Neighbors Riding the Rapid

Source: The Rapid Senior Mentor Program

As people age, they may need to change certain aspects about their lives to better meet their needs and reflect their abilities. This may mean creating new routines as older people begin to rely more heavily on public transportation; however, those unfamiliar with public transportation may be uncomfortable learning a new system and may be reluctant to do so on their own. The unfamiliarity can be daunting and confusing, but peer volunteers can provide support, knowledge, and guidance in this transition period, making it easier for all seniors to use public transportation as their primary means of mobility.

Michigan's Rapid Senior Mentor Program pairs an experienced senior volunteer with any senior who may be new to using fixed route service. Through the guidance of these peer mentors, new senior passengers learn how easy and safe riding the bus can be. The mentor answers transit service questions, plans the route to a destination of the passenger's choosing, and travels with the new passenger. The program also provides the participant a free 10-ride fare card to start his or her bus travels. All training programs are free to participants, including free rides during training.

Recruitment for mentors was targeted through personal relationships with current bus riders, recommendations of bus operators, senior centers, and key non-profits. Mentors went through an initial training before they began working with clients. Recruitment of potential clients is on-going. Any transit organization could replicate this program—it only requires a group of dedicated volunteers and the desire to market the program to potential riders so that they know that this personal and friendly transit-planning service is available to them. Some on-going recruitment of volunteers may be necessary.

The Rapid, the bus system serving Grand Rapids, Michigan, and the surrounding areas, created this program. This program has been beneficial not only to seniors themselves, but to the broader community as seniors are able to live more actively. According to an article describing the practice from the National Center on Senior Transportation, "over 800 older adults have been served through the Rapid's Senior Mentor Program. By allowing older adults to remain independent, their mental and physical fitness improves."[9] Businesses benefit from increased patronage from older adults who were once inactive due to previous apprehension about driving or using public transportation. There are savings associated with aging-in-place as long as needs such as reliable transportation are met. Many organizations can benefit from seniors' ability to volunteer or otherwise be engaged in activities. This program provides significant returns for the investment of time and resources needed to start and maintain a senior peer training program.

For additional information:

Agency: Interurban Transit Partnership
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[9] National Center on Senior Transportation. Accessed November 17, 2014. http://www.seniortransportation.net/ResourcesPublications/TheRapid.aspx

Engaging Older Adults in Emergency Preparedness Planning

In the United States, more than 1,300 natural disasters occur each year. Many times, these disasters require implementing evacuation plans to facilitate the immediate and rapid movement of people away from the threat or actual occurrence of a hazard. These plans should detail the partnerships and agreements between transportation agencies and private companies that are in place to evacuate older and vulnerable populations.

Figure 21. Seniors Participating in Emergency Planning

The 2009 Red River flooding in North Dakota and Minnesota brought record flood levels to the Fargo-Moorhead area. The flood was a result of saturated and frozen ground, spring snowmelt, and additional rain and snow storms. Communities along the Red River prepared for more than a week as the U.S. National Weather Service continuously updated the predictions for the city of Fargo, North Dakota, with an increasingly higher projected river crest.

The 2009 Fargo flood led to the evacuation of all nursing homes and assisted living centers as well as the area's largest hospital. To execute such a large-scale evacuation, various transportation providers pooled resources. This was possible in large part due to the partnerships already in place to permit the use of community resources, such as school buses, during an evacuation. Once evacuated, disaster relief shelters had to be prepared to accommodate the special needs of the elderly and disadvantaged occupants; for example, individuals with mobility devices could not navigate between the beds if cots were placed too closely together. Shelters also had to coordinate their staffing plans to ensure there were personnel to provide extra assistance for older and disabled occupants.

When developing disaster plans, communities should engage older adults and people with disabilities (or their representatives) to obtain their input. This ensures that their needs are being considered and resources are designated to assist them during a disaster. One way to include older adults in disaster planning is to invite their participation during table top exercises. This provides an opportunity for them to give direct input on emergency operation procedures, policies, communication protocols, and shelter requirements. They can also provide input on appropriate staging locations during an evacuation, effective protocols for serving passengers on paratransit while evacuating, and helping individuals with assistive devices (e.g., wheelchairs, walkers, oxygen tanks).

Fargo's preparations for the disaster made it possible to evacuate early, when roads were still accessible and shelter staff and volunteers were available to assist. When communities are able to provide advance notice to their residents, it creates a window of opportunity for briefings and early communication with both staff at shelters as well as the public. However, successful disaster preparedness relies heavily on existing plans, procedures, experience, and training when advance notice is not possible.

Figure 22. Emergency Personnel Evacuating Seniors

For additional information:

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It Takes a Village: Transportation Options

The Village model was born from the need for reliable, affordable, and readily available services to support the aging population in the community. Villages are non-profit, grass-roots organizations, offering services and programs catered towards their specific members' demographic. They are membership-driven, usually requiring a recurring fee that is much less than a conventional retirement home. This allows the Village to maintain some permanent staff who, along with administrative volunteers, provide health and wellness services for older adult members and provide a transportation service that reflects the needs of the Village members and the characteristics of the surrounding community. The Village administration also organizes social events, trips, and even home repairs—whatever the members request. Transportation is the most requested service that Villages provide to their members.

The high yearly cost of retirement communities is one of the major reasons why many older adults decide to live at home as long as possible. Older adults' hope to remain connected with their communities and their goal of maintaining their overall independence are two other factors that contribute to the desire to stay at home. The Village model provides an alternative to moving to a retirement community and can allow older adults the choice to age in their own homes. A Village can provide the services, connections, and care expected from retirement communities while still allowing Village members to remain independent by living at home in their familiar surroundings.

Potential members sign up to be included in their local Village typically by going to the Village offices and learning details about the organization, signing whatever forms may be required, and paying the membership fee. The Village provides members with transportation and other services using existing assets and resources found in the community such as volunteer drivers, discounted shared ride services, or discounted senior taxis. The exact methods used to provide transportation services vary from Village to Village and depend on a number of factors, such as:

- Availability and access to transportation options,
- Number of Village members and outside volunteers who are willing and able to provide transportation services, and
- Potential for local car-sharing businesses to provide discounted services to seniors who are Village members.

The overall goal is for the Village to work with the member to identify the types and methods of transportation that best fits the needs of the individual member.

The Village model was conceived in 2001 by Beacon Hill residents in Boston, Massachusetts. The Village to Village Network, a joint partnership between the Beacon Hill Village and Capital Impact Partners, a nationwide non-profit focused on community development, connects each Village through this peer to peer network, providing them with a platform to share ideas with other Villages to strengthen and sustain their organizations. According to the Village to Village Network, "145 Villages are operating across the country, in Canada, Australia and the Netherlands." [10]

[10] Village to Village Network. Accessed November 17, 2014. http://www.vtvnetwork.org/

Using the Village model to provide transportation for seniors is something that could easily be replicated elsewhere. In fact, currently there are "over a 100 additional Villages in development," according to the Village to Village Network. No two Villages are identical, but the use of the Village model will effectively serve the members of any Village. The following two Village examples show how the Village model allows a Village to provide transportation service to its members despite drastic differences:

Monadnock at Home is a Village located in rural New Hampshire that spans almost 400 square miles. For members of this Village, one's neighbors may not be in sight; grocery stores may be more than 30 miles away; and long, cold winters can leave individuals isolated at home for long periods of time. The Village coordinates transportation for members wherever they live (within a reasonable boundary that includes eight neighboring towns). They partner with the local Red Cross and a local transportation company, coordinating volunteer drivers for themselves and their organizational partners in exchange for route planning skills provided by the two partner organizations. This system of coordination among volunteer drivers provides an invaluable service in such a rural setting.

The Capitol Hill Village in Washington, D.C. provides transportation for its members using approximately 70 volunteer drivers who respond to email or phone request for rides anywhere within or around the Nation's capital. In addition, the Village coordinates ridesharing to Village events. The urban setting of this Village allows for direct communication between the Village administration, members, and volunteer drivers.

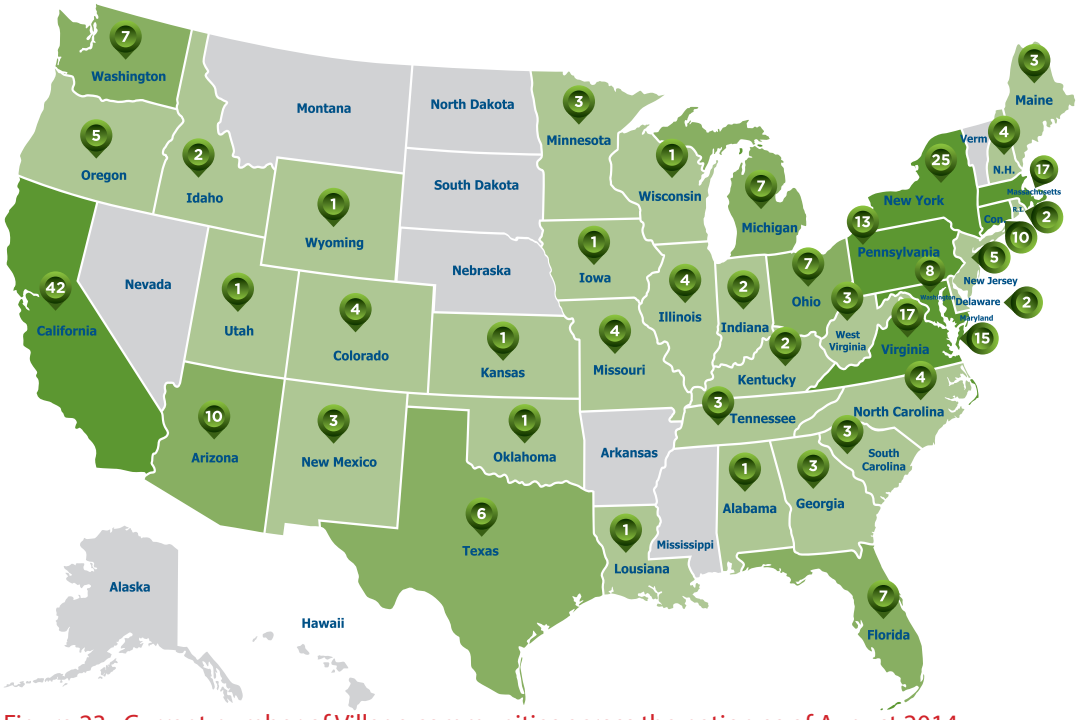

Figure 23. Current number of Village communities across the nation as of August 2014

Source: Village to Village Network, LLC

This is the beauty of the Village model. Although these two locations are very different, they each have a solution that suits their specific needs. With service of the members as their guiding mission, the Village inevitably chooses the best options for the members, relying heavily on members' feedback and stated needs in order to find the best solution. With that model in place, the most likely outcome is that members will be paired with transportation services that best meet their individual needs.

For additional information:

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Agency: Monadnock at Home
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Agency: Capital Impact Partners
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For More Information:

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